



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,986	01/29/2004	Lincoln Eramo	S63.2-11325-US01	5339
490 7590 08/08/2007 VIDAS, ARRETT & STEINKRAUS, P.A. SUITE 400, 6640 SHADY OAK ROAD EDEN PRAIRIE, MN 55344			EXAMINER BERMAN, SUSAN W	
			ART UNIT 1711	PAPER NUMBER
			MAIL DATE 08/08/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/767,986

Applicant(s)

ERAMO, LINCOLN

Examiner

/Susan W. Berman/

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-70 is/are pending in the application.
- 4a) Of the above claim(s) 14, 18-20, 38 and 44-58 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-17, 21-37, 39-43 and 59-70 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 5/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Election/Restrictions

Applicant's election with traverse of Group I, claims 1-43 and 59-70, and the species wherein A) is a polyalkylene glycol and the photoinitiator B) is an α -amino ketone, claims 1-13, 15-17, 21-37, 39-43 and 59-70, in the reply filed on 06-04-2007 is acknowledged. The traversal is on the ground(s) that it would not be an undue burden to examine all of the claims at one time. This is not found persuasive for the following reasons. With respect to the restriction requirement, applicant has not presented any argument that the compositions cannot be used in a materially different method to rebut the basis for restriction. With respect to the election of species, applicant has not admitted on the record or provided evidence to show that the different species are obvious variants of one another. Therefore, the restriction and election requirements are maintained.

Claims 44-58 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Claims 14, 18-20 and 38 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species of the elected invention, there being no allowable generic or linking claim.

The claims drawn to a method of coating may be rejoined upon finding allowable subject matter in the compositions claims and amendment of the method claims to be of the same scope as any allowable composition claims. The claims drawn to a non-elected species will be considered upon finding an allowable claim generic to the elected and non-elected species.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

Claims 13, 28, 37 and 59-61 are objected to because of the following informalities: In claim 13, the recitation “ ∇ -amino ketones” should be “ α -amino ketones”. In claim 28 the phrase “composition curable by actinic radiation lubricious composition” is unclear. Does applicant intend to claim a “lubricious composition curable by actinic radiation” ?

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 13, 29, 30, 37, 42, 43, and 59-70 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 13 and 37, acrylated amine synergists are set forth as a species of photoinitiator. Acrylated amine synergists are not known to function as photoinitiators. There is no antecedent basis in claim 28 for the recitation in each of claims 29, 30, 42 and 43 of the “lubricious coating” because claim 28 sets forth a “lubricious composition”. With respect to claims 42-43, it is suggested that claim 42 should read “A lubricious coating on the surface of a medical device or on the surface of a component thereof obtained by applying and photocuring the lubricious composition of claim 28 on said surface”. A coating is provided when a coating composition is cured and has chemically different properties from the composition before curing. With respect to claims 59 and 62-65, it is not clear whether applicant intends to claim an “ethylenically unsaturated resin” as in claim 59 or an ethylenically

Art Unit: 1711

unsaturated monomer such as alkoxyated trimethylol propane triacrylate as in claim 64. A “resin” by definition can be a natural resin or a synthetic resin wherein the synthetic resin is the polymerization or condensation product of simpler compounds, such as an alkoxyated trimethylol propane triacrylate. Furthermore, if applicant intends to claim a synthetic resin obtained by polymerization of the triacrylate in claim 64, such resin would not be expected to be ethylenically unsaturated since the polymerization saturates the unsaturation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9, 12, 16, 17, 21-23, 27-32, 34-36 and 41-43 are rejected under 35

U.S.C. 102(b) as being anticipated by Buscemi et al (5,693,034). Buscemi et al disclose a lubricious polymer network comprising the reaction product of a vinyl prepolymer and an uncrosslinked hydrogel retained within the reaction product so that the network exhibits greater lubricity when wet. The hydrogels disclosed include polyethylene oxide (column 2, lines 34-41). The vinyl monomers include glyceryl propoxy triacrylate and diacrylates such as di-, tri-, tetra- or poly-ethylene glycol di(meth)acrylates (column 2, lines 56, to column 3, line 3). Isopropyl alcohol and water can be used as solvent (column 3, lines 4-11). A free radical initiator, such as azobisisobutyronitrile, is employed and curing can be by UV light exposure (column 3, lines 12-

Art Unit: 1711

13 and lines 32-43). UV curing in the presence of azobisisobutyronitrile is taught in the examples. See Examples 1, 4 and 6.

Claims 1-13, 15, 16, 22-25, 27-33, 36, 37, 39-43, 59, 60, 62-66 and 70 are rejected under 35 U.S.C. 102(b) as being anticipated by Burns et al (6,506,823). Burns et al disclose nitrocellulose based coating compositions comprising polymerizable reactive diluents, acrylated urethane and photoinitiator. The difunctional and trifunctional reactive diluents comprise alkoxyated (meth)acrylates, including ethoxylated trimethylolpropane triacrylate (column 4). Azo initiators are taught in column 6, lines 15-24. Photoinitiators such as 2-benzyl-2-dimethylamino-1-(4-morpholino)butanone-1 and others recited in instant claims 13 and 37 are disclosed in column 6, lines 25-51. Additives are taught in columns 7-8. With respect to claim 25, the flow/Leveling agents include silicone polyether acrylates and the wetting agents include a polyacrylate copolymer. The nitrocellulose is the product of hydroxyl cellulose having only 10-12.5% of the hydroxyl groups nitrated and thus would be expected to provide a cellulose having lubricity in the absence of evidence to the contrary. Burns et al teach coating wood substrates. There is no mention of coating medical devices. However, the instant claims are considered to be anticipated because the phrases "suitable for use on medical device" in claim 1 or "for use on a medical device" in claim 59 are merely statements of future intended use and not of patentable weight. Claim 28 recites a "composition curable by actinic radiation" and so is anticipated by the disclosure of Burns et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10, 11, 13, 15, 33, 37, 39, 59-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buscemi et al (5,693,034) in combination with Burns et al (6,506,823). Buscemi et al teach glyceryl propoxy triacrylate and diacrylates such as di-, tri-, tetra- or poly-ethylene glycol di(meth)acrylates as suitable vinyl monomers but do not mention ethoxylated trimethylolpropane triacrylate. A free radical initiator, such as azobisisobutyronitrile, is employed and curing can be by UV light exposure (column 3, lines 12-13 and lines 32-43). Burns et al disclose difunctional and trifunctional reactive diluents comprise alkoxylated (meth)acrylates, including ethoxylated trimethylolpropane triacrylate (column 4). Azo initiators are taught in column 6, lines 15-24. Photoinitiators such as 2-benzyl-2-dimethylamino-1-(4-morpholino)butanone-1 and others recited in instant claims 13 and 37 are disclosed in column 6, lines 25-51. Additives are taught in columns 7-8.

With respect to claims 13, 15, 37, 39 and 59-70, It would have been obvious to one skilled in the art at the time of the invention to substitute one of the photoinitiators taught by Burns et al for the azobisisobutyronitrile disclosed by Buscemi et al. Buscemi et al teach curing by exposure to UV radiation in the presence of the azobisisobutyronitrile initiator. Burns et al teach that azo initiators or photoinitiators such as 2-benzyl-2-dimethylamino-1-(4-

Art Unit: 1711

morpholino)butanone-1 and other phenyl ketones are suitable for photopolymerizing analogous compositions comprising alkoxyated (meth)acrylate compounds. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of successfully photocuring the compositions taught by Buscemi et al in the presence of photoinitiators taught by Burns et al for photopolymerizing analogous compositions.

With respect to claims 10, 11, 33 and 64, It would have been obvious to one skilled in the art at the time of the invention to employ ethoxylated trimethylolpropane triacrylate as an alkoxyated (meth)acrylate in the compositions taught by Buscemi et al as taught by Burns et al in analogous compositions. Buscemi et al provide motivation by teaching glyceryl propoxy triacrylate and diacrylates such as di-, tri-, tetra- or poly-ethylene glycol di(meth)acrylates as suitable vinyl monomers. Burns et al provide motivation by specifically disclosing ethoxylated trimethylolpropane triacrylate among useful difunctional and trifunctional reactive diluents comprising alkoxyated (meth)acrylates in analogous compositions. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of obtaining a useful lubricious polymer network comprising the reaction product of a vinyl prepolymer, as required by Buscemi et al.

Claims 13, 15, 37, 39, 60 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns et al (6,506,823) in view of Bae et al (5,667,735). Burns et al disclose difunctional and trifunctional reactive diluents comprise alkoxyated (meth)acrylates, including ethoxylated trimethylolpropane triacrylate (column 4). Azo initiators are taught in column 6, lines 15-24. Photoinitiators such as 2-benzyl-2-dimethylamino-1-(4-morpholino)butanone-1 and

Art Unit: 1711

others recited in instant claims 13 and 37 are disclosed in column 6, lines 25-51. Additives are taught in columns 7-8.

Bae et al disclose coatings for ophthalmic devices. The compositions comprise polyacryloylated alkane polyols, alkoxylated alkane polyols having at least three acrylate groups, such as ethoxylated trimethylolpropane triacrylate, a photoinitiator and other additives (column 3, lines 37-57, and column 5, lines 19-42). The photoinitiators taught include 2-methyl-1-[4-(methylthio)phenyl]-2-morpholino-propanone-1 (column 5, lines 43-50). Additional photoinitiators are taught in column 11, lines 18-39.

It would have been obvious to one skilled in the art at the time of the invention to substitute 2-methyl-1-[4-(methylthio)phenyl]-2-morpholino-propanone-1 disclosed by Bae et al for the 2-benzyl-2-dimethylamino-1-(4-morpholino)butanone-1 photoinitiator in the compositions disclosed by Burns et al. Burns et al provide motivation by disclosing the morpholino butanone as an example of a useful photoinitiator. Bae et al provide motivation by disclosing that an analogous morpholino propanone photoinitiator is useful for polymerizing alkoxylated (meth)acrylate monomers analogous to the polymerizable monomers taught by Burns et al. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of providing a suitable photoinitiator for the compositions disclosed by Burns et al.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burns et al (6,506,823) in view of Wang et al (6,458,867). Burns et al disclose difunctional and trifunctional

Art Unit: 1711

reactive diluents comprise alkoxyated (meth)acrylates, including ethoxylated trimethylolpropane triacrylate (column 4). Additives are taught in columns 7-8.

Wang et al disclose hydrophilic lubricant coatings for medical devices. The hydrophilic coatings are obtained from a nonhydrophilic polymeric material converted to a carboxylic acid or alcohol (column 8, lines 47-52, and column 9, lines 20-67, and column 15, lines 13-34).

Polyalkylene glycols are preferred. A crosslinkable primer composition comprising compounds having hydrophilic functionality is taught, such as an amino silane (column 11, line 47, to column 12, line 28).

It would have been obvious to one skilled in the art at the time of the invention to include a compound such as the amino silane taught by Wang et al in the compositions disclosed by Burns et al in order to take advantage of the coupling properties of the silane compound. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of improving the adhesion of the coating composition to the substrate being coated.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Garcia et al (6,436,540) teaches that azobisisobutyronitrile is a known photoinitiator. Caiger et al (6,114,406) discloses radiation curable ink compositions and teach that the alkoxyated acrylate monomers provide low viscosity compositions with low toxicity and/or irritancy (column 2, lines 10-20). Rouns et al (US 2004/0151930) disclose a lubricious coating for medical devices comprising a hydrogel polymer wherein a multifunctional monomer is imbibed into the surface of the medical device to bond the polymer to the device. Askienazy et al

Art Unit: 1711

(5,936,005) teach α -amino ketone photoinitiators for photopolymerizing alkoxylated (meth)acrylate diluents in the presence of a styrene-carboxylic anhydride copolymer. Gould et al (4,439,583) disclose polyurethane diacrylate compositions obtained by reacting a diacrylate in the presence of a hydrophilic polyurethane.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Susan W. Berman/ whose telephone number is 571 272 1067.

The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SB
8/3/2007

/Susan W Berman/
Primary Examiner
Art Unit 1711